(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 215 165 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.06.2002 Bulletin 2002/25

(51) Int Cl.[7]: **B67B 7/04**

(21) Application number: **01500234.8**

(22) Date of filing: **04.09.2001**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **25.09.2000 ES 200002318**

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(54) Corkscrew

(57) A corkscrew with a general tubular shape, having a lower mouth (11) for the introduction of the neck (2) of the bottle to be uncorked; an operating lever (3) assembled by means of a rotation shaft (31) over the upper end of the tubular body; an upper part (4) housed inside the tubular body (1) with the possibility of longitudinal displacement, a cork-screw (5) installed with the possibility of free rotation over the upper part (4), an action arm (32) relating the operating lever (3) to the upper part (4), a lower part (6) assembled with the possibility of longitudinal displacement inside the tubular body (1) and preventing rotation with respect to the same, a retention lever (8) for immobilisation of the neck (2) of the bottle inside the lower mouth (11) of the tubular body (1) during uncorking of the former, means (64) to interlock the upper and lower parts (4,6) in their ascent movement during bottle uncorking and means (7) to retain the lower part (6) in a position next to the lower mouth (11) of the tubular body (1) during release of the cork remove.

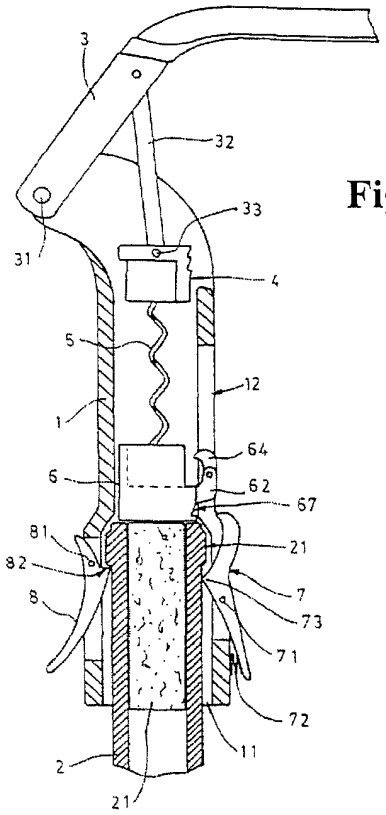

Fig.2

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Description

OBJECT OF THE INVENTION

[0001] The present invention refers to a corkscrew having a generally tubular body which has installed in its upper part a operating lever acting by means of an action arm over a displaceable part carrying a rotational cork-screw, the corkscrew including some auxiliary parts and retention means permitting by successive movements of the operating lever the introduction of the cork-screw in the cork to be removed, the uncorking of the bottle and the release of the cork with respect to the corkscrew.

BACKGROUND OF THE INVENTION

[0002] Currently, different types of corkscrew exists on the market, generally having a corkscrew shape related to means permitting their displacement by rotation or by means of pressure.

[0003] Generally, in these corkscrews the cork-screw is initially introduced in the cork to be removed causing the displacement of the cork-screw together with the cork until the latter is released from the bottle to be uncorked; finally and once the cork has been removed, it is necessary to free it from the cork-screw, this operation being carried out manually.

DESCRIPTION OF THE INVENTION

[0004] The corkscrew object of the present invention has some constructional features permitting the removal of the cork from the bottle and later on, to release the cork from the cork-screw by means of successive actions over an operating lever incorporated in the corkscrew. This characteristic considerably simplifies the use of the corkscrew, since the release of the cork with respect to the cork-screw, is automatically performed and without the need of manual removal.

[0005] According to the invention, this corkscrew consists of: a tubular body with a lower mouth for the introduction of the neck of the bottle to be uncorked, an operating lever fitted by means of a rotation shaft over the upper end of the tubular body, an upper part carrying the cork-screw and housed inside the tubular body with possibility of longitudinal displacement, an action arm relating the operating lever to the mentioned upper part, a lower part installed with the possibility of longitudinal displacement inside the tubular body, a retention lever to immobilise the neck of the bottle inside the lower mouth of the tubular body, some means to retain the lower part in a position near to the tubular body mouth and some devices to interlock the upper and lower parts in their movement during uncorking of the bottle.

[0006] The upper part has: a longitudinal hole with a lower step, a diametric hole for the positioning of a shaft entrusted with relating it to one of the action arm parts and an internal plate arranged between the action arm head and the lower step.

[0007] The cork-screw has in its upper end a flat head housed with the possibility of rotation between the lower step and the internal plate of the upper part, their being housed between them some anti-friction components facilitating the free rotation of the cork-screw with respect to the upper part.

[0008] To facilitate the movement of the upper and lower parts, inside the tubular body, during the combined displacement thereof, both parts have some recesses and opposed appendices destined to fit into each other assuring their alignment inside the mentioned tubular body.

[0009] In a longitudinal direction, the lower part has a helicoidal hole for the guided passage of the cork-screw during its introduction and removal of the cork, moreover having foreseen that said lower part laterally has an appendix which is housed in a guide-groove defined in the tubular body preventing its rotation.

[0010] The lower part has a foldable tooth installed by means of the corresponding rotation shaft over the aforementioned lateral appendix, said tooth tending to interlock, by the action of a spring, in a toothing defined in the upper part. The purpose of this toothing is to hook both parts, so that they are displaced together upwards through the interior of the tubular body during cork removal.

[0011] The lever used to retain the neck inside the mouth of the tubular body is laterally fitted over the latter by means of a rotation shaft and has a tooth destined to act against the lower surface of the peripheral thickening of the neck.

[0012] With this arrangement of components, once the neck of the bottle to be uncorked has been introduced and retained in the mouth of the tubular body, when provoking the descent of the punch by means of the operating lever, the former simultaneously describes a combined forward and rotation movement, passing through the helicoidal hole defined in the upper part and being introduced in the cork to be removed; on pulling the operating lever towards the upper area, the simultaneous elevation of the upper part, the cork-screw, the lower part and the bottle cork is achieved, the upper and lower parts being kept together in this movement thanks to the action of the tooth in the lower part.

[0013] Once the corkscrew has been removed from the bottle, on activating the lever again towards the lower area, the descent of the upper part, the lower part and the cork is obtained, the lower part remaining immobilised in the lowest part of its run by the action of a lever fitted over the tubular body and having an end tooth which is interlocked by the action of a spring in a recess defined in the lower part for such a purpose, so that on again pulling the operating lever towards the upper area, the lower part is detached from the upper part and kept in the retention position, such that on acting as a stop for the cork it causes the cork-screw to be released from

the latter during the ascending motion.

DESCRIPTION OF THE DRAWINGS

[0014] To complete the description being made and to help the understanding of the features of the invention, a set of drawings is attached to this specification, in which with an illustrative and non-limiting character the following is shown:

- Figure 1 shows a profile view of a practical example of an embodiment.
- Figures 2, 3, 4, 5 and 6 correspond to a sequence of corkscrew movements during removal of a cork, having shown in all of them the corkscrew in an elevated view and the tubular body thereof, cut along a longitudinal plane.
- Figure 7 shows a longitudinal section of the upper part in which the assembly of the cork-screw over the latter may be observed.

PREFERRED EMBODIMENT OF THE INVENTION

[0015] As may be observed in the drawings, the corkscrew object of the invention has a tubular body (1) provided with a lower mouth (11) for the introduction of the neck (2) of the bottle to be uncorked.

[0016] Over the upper end of the tubular body (1), an operating lever (3) is fastened by means of the corresponding rotation shaft (31). This operating lever (3) is related by means of an action arm (32) to an upper part (4) assembled with the possibility of longitudinal displacement inside the tubular body (1).

[0017] The part (4) has a longitudinal hole (41) with a lower step (42), a diametric hole for the positioning of the shaft (33) entrusted with fastening the lower head of the action arm (32) to the part (4) and an internal plate (43) arranged between the lower end of the action arm (32) and the step (42).

[0018] In the upper part (4), the cork-screw (5) is installed with the possibility of free rotation, the cork-screw (5) having a head (51) housed between the plate (43) and the lower step (42) of the part (4), some balls (52) being located between said components reducing its contact surface and acting as anti-friction components facilitating rotation of the cork-screw (5).

[0019] The lower part (6) also installed with the possibility of displacement inside the tubular body (1), longitudinally has a helicoidal hole (61) for guidance of the cork-screw (5) in the passage through its interior.

[0020] Said lower part (6) has an appendix (62) laterally, which is kept housed in a longitudinal groove (12) defined in the tubular body (1) the lower part (6) the rotation being locked.

[0021] On the lateral appendix (62), there is a foldable tooth (64) which is installed by means of a rotation shaft (63), the former tending to interlock by action of a spring (65) in a toothing (44) defined in the upper part (4).

[0022] The purpose of this tooth (64) is to maintain the upper (4) and lower (6) parts joined during cork (21) removal.

[0023] The upper and lower parts (4 and 6) have some recesses (45) and appendices (66) opposite each other and intended to interlock with each other assuring the alignment thereof during its joint displacement inside the tubular body (1).

[0024] To retain the lower part (6) near the mouth (11) during the unthreading of the cork-screw with respect to the cork (21) as shown in figures 5 and 6, it has been foreseen that over the tubular body (1), a foldable lever (7) is installed by means of a rotation shaft (71), the former has an end tooth (72) which tends to be housed by the action of a spring (72) in a lateral recess (77) defined in the lower part (6).

[0025] This lever (7) has in its central area a protuberance (73) towards the bottle (11) interior, so that when the neck (2) is introduced in the corkscrew mouth it acts against the mentioned protuberance (73) keeping the lever (7) in an unoperational position. When the cork-screw is removed from the bottle after having removed the cork, the lever (7) is folded by the action of the spring (72) towards the operative position.

[0026] To retain the neck (2) of the bottle inside the mouth (11) during the removal of the cork, it has been foreseen that over the tubular body (1) a retention lever (8) with a tooth (82) destined to act against the lower surface of the peripheral thickening (22) of the mentioned neck (2) is fitted by means of the corresponding rotation shaft (81).

[0027] As may be observed in figure 2, when the neck (2) of the bottle to be uncorked is introduced inside the mouth (11) and immobilised by means of the lever (8), said neck (2) acts against the protuberance (73) of the lever (7) releasing the lower part (6).

[0028] On pressing the operating lever (3) towards the lower position, the cork-screw (5) is introduced in the helicoidal hole (61) of the lower part (6), simultaneously describing a descent and rotation movement, facilitating its introduction in the cork (21). As may be observed in figure 3, when the cork-screw (5) is interlocked in the cork (21), the tooth (64) of the lower part is interlocked in the toothing (44) of the upper part that such on pulling the lever (3) towards the upper area, as shown in figure 4, the simultaneous elevation of the upper part (4), the cork-screw (5), the lower part (6) and the cork (21) is achieved.

[0029] As may be observed in figure 5, once the cork has been removed, the retention lever (8) is released from the neck to separate the corkscrew from the bottle. When the neck (2) stops acting over the protuberance (73) of the lower lever (7) it passes due to action of the spring (72) towards an operative position, so that on again displacing the operating lever (3) towards the lower position as shown in figure 5, said lever (3) blocks the lower part (6) in the lowest position of its run. When the lever (3) is acted upon again, towards the upper area

and the tooth (64) of the lower part is released from the toothing (44) of the upper part when a specific tension is reached, the lower part (6) is retained by the lever (7). By means of a new action of the lever (3) towards the upper area, only the elevation of the upper part (4) and the cork-screw (5) will be achieved, since the cork will contact frontwise against the lower part (6), hence achieving the unthreading of the cork-screw (5) and release of the cork (21).

[0030] In the preferred embodiment shown in figure 1, it has been foreseen that as an accessory there is a mouth (91) for the lifting of crown corks, as well as a small penknife (92).

[0031] Once the nature of the invention has been sufficiently disclosed, as well as an example of a preferred embodiment, it is stated that for the relevant purposes, the materials, shape, size and arrangement of the components described may be modified, provided this does not change the essential features of the invention claimed below.

Claims

1. Corkscrew characterised on having: a generally tubular body with a lower mouth for the introduction of the neck of the bottle to be uncorked; an operating lever installed by means of a rotation shaft over the upper end of the tubular body; an upper part housed inside the tubular body with possibility of longitudinal displacement, a cork-screw fitted with the possibility of free rotation over the upper part, an action arm which relates the triggering lever to the upper body, a lower body fitted with the possibility of longitudinal displacement inside the tubular body and preventing rotation with respect to the same, a retention lever to immobilise the neck of the bottle inside the lower mouth of the tubular body during uncorking of the former, means to interlock the upper and lower parts in their ascent movement during uncorking of the bottle and some means to retain the lower part in a position next to the lower mouth of the tubular body during release of the cork removed by part of the cork-screw.

2. A corkscrew according to the previous claim, **characterised in that** the upper part has a longitudinal hole with a lower step, a diametric hole for positioning a shaft entrusted with relating said part with one of the action arm heads and an internal plate arranged between the action arm head and the lower step.

3. A corkscrew according to the previous claim, **characterised in that** the upper end of the cork-screw has a flat head housed with possibility of free rotation between the lower step and the internal plate of the upper part.

4. A corkscrew according to previous claims, **characterised in that** between the lower surface of the cork-screw head and the step of the lower part, there are some balls acting as anti-friction components during elevation of the cork-screw.

5. A corkscrew according to previous claims, **characterised in that** between the upper surface of the cork-screw head and the central area of the internal plate, there is a ball acting as an anti-friction component during descent of the corkscrew.

6. A corkscrew according to previous claims, **characterised in that** the upper and lower parts have some recesses and appendices opposite to each other, destined to interlock with each other assuring their alignment during their combined displacement inside the tubular body.

7. A corkscrew according to previous claims, **characterised in that** the lower part has laterally an appendix which is kept housed in a longitudinal groove defined in the tubular body, preventing rotation thereof with respect to the latter.

8. A corkscrew according to previous claims, **characterised in that** the lower part has a helicoidal hole longitudinally for the guided passage of the cork-screw during its introduction and removal form the cork.

9. A corkscrew according to previous claims, **characterised in that** the lower part has a foldable tooth fitted by means of a rotation shaft over the lateral appendix and which tends to interlock in a toothing defined in the upper part by the action of a spring, both parts being interlocked during the ascent movement when removing the cork.

10. A corkscrew according to previous claims, **characterised in that** the retention lever of the neck inside the lower mouth is fitted sideways over the tubular body by means of a rotation shaft and has a tooth destined to act against the lower surface of the peripheral thickening of the neck.

11. A corkscrew according to previous claims, **characterised in that** the means for retaining the lower part in a position next to the lower mouth of the tubular body consists of a lever assembled over the tubular body, said lever having an end tooth that tends to be housed by the action of a spring in a lateral recess defined in the lower part and which is released from said recess by the action of the bottle neck over a protuberance defined in the middle area of said lever.

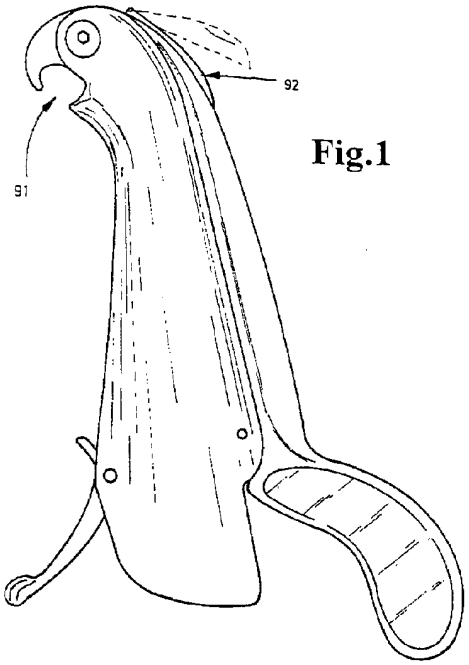

Fig.1

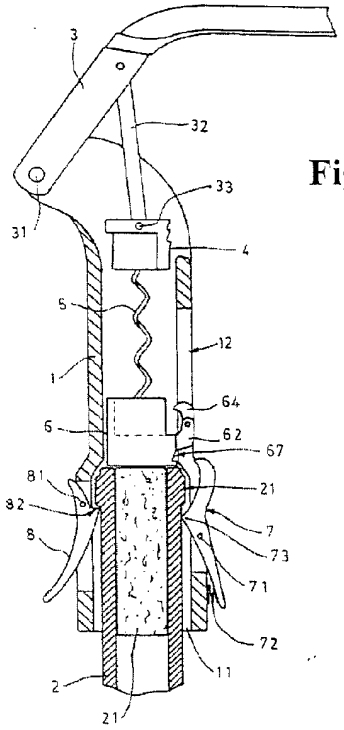

Fig.2

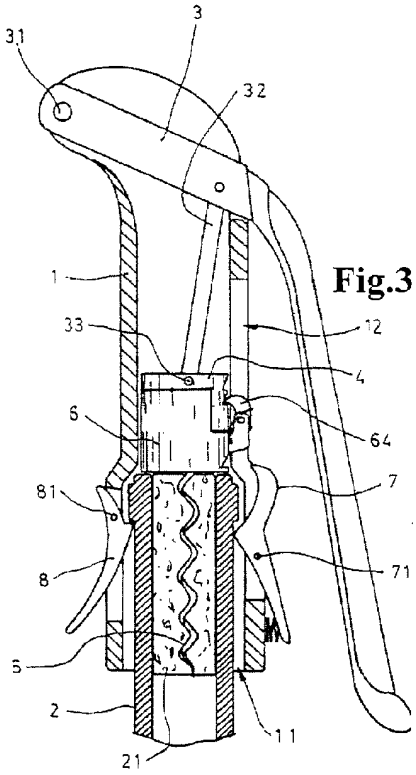

Fig.3

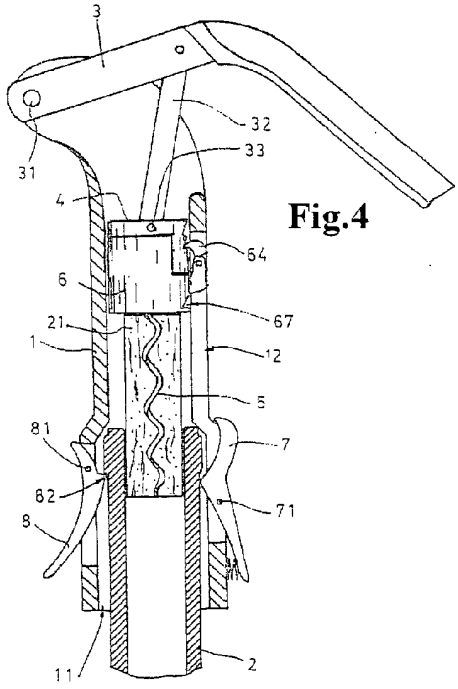

Fig.4

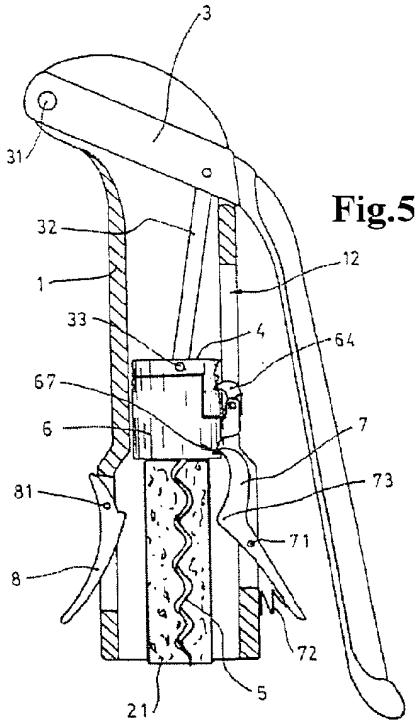

Fig.5

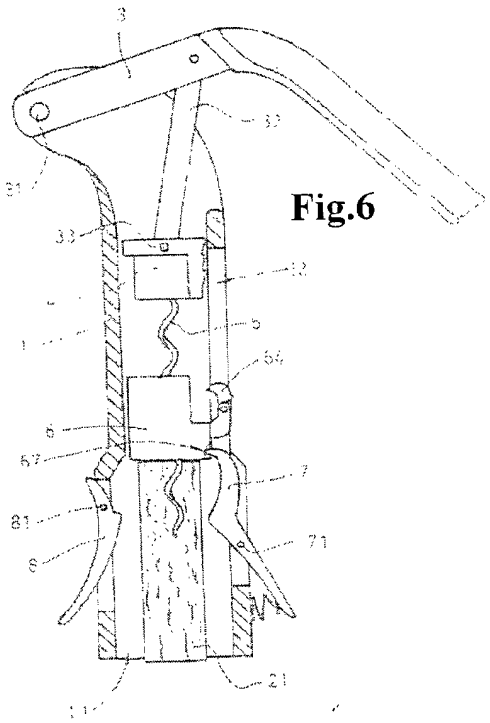

Fig.6

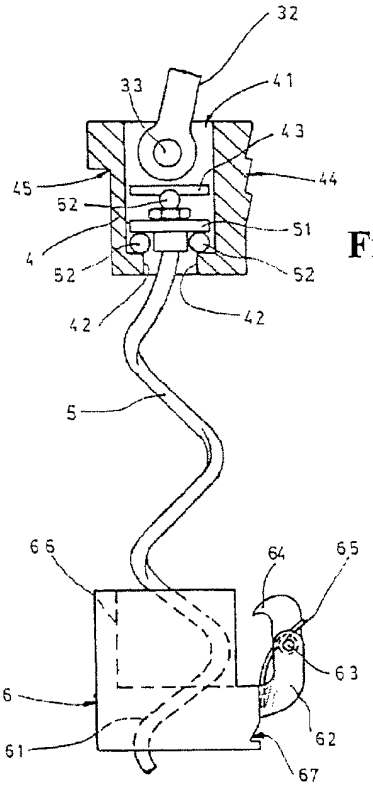

Fig.7

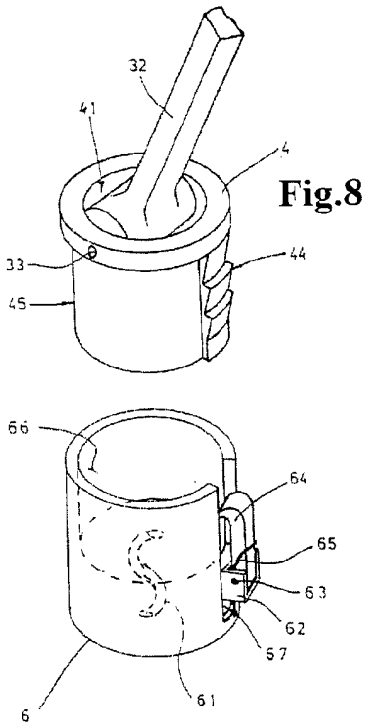

Fig.8

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 50 0234

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 818 414 A (VIA EMPRESARIAL S L) 14 January 1998 (1998-01-14) * column 3, line 38 - column 5, line 53; figure 1 *	1-3,5-11	B67B7/04
Y	FR 2 318 103 A (ZERBINATO LEONARDO) 11 February 1977 (1977-02-11) * page 2, line 5 - line 11; figure 2 * * page 2, line 20 - line 25 *	1-3,5-11	
A	FR 2 780 390 A (BIRAMBEAU) 31 December 1999 (1999-12-31) * page 3, line 3 - page 5, line 27; figure 4 *		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B67B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26 March 2002	Schneider, M

CATEGORY OF CITED DOCUMENTS

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26-03-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0818414 A	14-01-1998	ES 1032327 U1	16-04-1996
		AT 203737 T	15-08-2001
		DE 69614254 D1	06-09-2001
		EP 0818414 A1	14-01-1998
		US 6073519 A	13-06-2000
		WO 9715523 A1	01-05-1997
FR 2318103 A	11-02-1977	FR 2318103 A1	11-02-1977
FR 2780390 A	31-12-1999	FR 2780390 A1	31-12-1999
		CA 2301946 A1	06-01-2000
		EP 1007469 A1	14-06-2000
		WO 0000422 A1	06-01-2000

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

PUB-NO: EP001215165A1

DOCUMENT-IDENTIFIER: EP 1215165 A1

TITLE: Corkscrew

PUBN-DATE: June 19, 2002

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APPL-NO: EP01500234

APPL-DATE: September 4, 2001

PRIORITY-DATA: ES200002318A (September 25, 2000)

INT-CL (IPC): B67B007/04

EUR-CL (EPC): B67B007/04 , B67B007/04

ABSTRACT:

CHG DATE=20020702 STATUS=O> A corkscrew with a general tubular shape, having a lower mouth (11) for the introduction of the neck (2) of the bottle to be uncorked; an operating lever (3) assembled by means of a rotation shaft (31) over the upper

end of the tubular body; an upper part (4) housed inside the tubular body (1) with the possibility of longitudinal displacement, a cork-screw (5) installed with the possibility of free rotation over the upper part (4), an action arm (32) relating the operating lever (3) to the upper part (4), a lower part (6) assembled with the possibility of longitudinal displacement inside the tubular body (1) and preventing rotation with respect to the same, a retention lever (8) for immobilisation of the neck (2) of the bottle inside the lower mouth (11) of the tubular body (1) during uncorking of the former, means (64) to interlock the upper and lower parts (4,6) in their ascent movement during bottle uncorking and means (7) to retain the lower part (6) in a position next to the lower mouth (11) of the tubular body (1) during release of the cork remove. □